

Design Memorandum No. 04-2006

TO: Engineering Offices and Divisions
Districts
Consulting Engineers

FROM: Mark S. Gaydos, P.E. - Design
Engineer /s/

DATE: September 1, 2006

Design Manual Reference:

Section I-06.06 and Appendix I-06 E

☒ Revision
☐ Supplemental

SUBJECT: DESIGN EXCEPTION REQUEST

Introduction

This guidance is intended to Replace the Current Design Exception in the Design Manual. The Design Exception Request form is attached. A Word version of the form can be found at: http://www.dot.nd.gov/designmanual_wp_docfiles.html.

Implementation

The use of this guidance is to be implemented immediately. Projects requiring a Design Exception should be implemented as follows:

Guidance

The Design Exception Request form will be completed for all projects requiring a design exception.

The attached guidelines, covering exceptions to the general design guides, were approved by the FHWA and are currently in effect. Designers contemplating the need for the use of design values, on a specific project, which are not in compliance with the accepted design guides, should follow the attached procedure in documenting and obtaining approval of the design exceptions. Generally, the following design elements will require a formal design exception if the use of the design values are not in compliance with the accepted values being contemplated:

- Design Speed
- Lane Width
- Shoulder Width
- Horizontal Alignment
- Vertical Alignment
- Grade

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- Superelevation
- Cross Slopes (including edge taper to slough)
- Stopping sight Distance
- Bridge Width
- Bridge Structural Capacity (including static loading of bridge railings)
- Horizontal Clearance (not including clear zone)
- Vertical Clearance
- Guardrail

Address:

- 1) The Design Exception will be a stand alone document and will not be included in the Project Concept Report (PCR).
- 2) Design Exceptions require FHWA approval on all Interstate projects, and for projects on the NHS > 3 million dollars requiring full involvement.
- 3) Design Exceptions not requiring approval by FHWA are approved internally by the NDDOT.

Questions

Any questions regarding the content or implementation of the memorandum should be referred to James Rath, Design Division, 701-328-1722.

Approved

_____/s/_____
Francis G. Ziegler, P.E. - Director, Office of Project Development

____9/6/06____
Date

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION DESIGN EXCEPTION REQUEST

I. Project Description (fill in project information and provide a brief write up of project and limits):

Project # _____ PCN _____

<u>Work Type</u>	<u>System</u>	<u>Involvement</u>
<input type="checkbox"/> New Constr/Reconstruction	<input type="checkbox"/> NHS	<input type="checkbox"/> Exempt
<input type="checkbox"/> 3R	<input type="checkbox"/> Non NHS	<input type="checkbox"/> Full FHWA Involvement
<input type="checkbox"/> Preventive Maintenance		

<u>Highway Classification</u>	<u>Cross Section</u>
<input type="checkbox"/> Interstate	<input type="checkbox"/> Interstate Divided
<input type="checkbox"/> Interregional	<input type="checkbox"/> Rural Divided
<input type="checkbox"/> State Corridor	<input type="checkbox"/> Rural Two Lane
<input type="checkbox"/> District Corridor	<input type="checkbox"/> Urban (all cross sections)
<input type="checkbox"/> District Collector	
<input type="checkbox"/> Other _____	

Speed and existing and future traffic volumes:

Posted Speed _____	Design Speed _____	
Existing Pass ADT _____	Existing Truck ADT _____	Year _____
Future Pass ADT _____	Future Truck ADT _____	Year _____

Location:

Description of Work:

II. Design Exception for the following element (identify location(s) below).

- | | | |
|--|--|--|
| <input type="checkbox"/> Design Speed | <input type="checkbox"/> Lane Width | <input type="checkbox"/> Vertical Clearance ¹ |
| <input type="checkbox"/> Bridge Width | <input type="checkbox"/> Structural Capacity | <input type="checkbox"/> Grade |
| <input type="checkbox"/> Horizontal Alignment | <input type="checkbox"/> Vertical Alignment | <input type="checkbox"/> Superelevation |
| <input type="checkbox"/> Stopping Sight Distance | <input type="checkbox"/> Cross Slope | <input type="checkbox"/> Guardrail |
| <input type="checkbox"/> Horizontal Clearance | <input type="checkbox"/> Shoulder Width | |

¹Per FHWA Memorandum titled "Vertical Clearance, Interstate System Coordination of Design Exceptions" dated August 15, 1997, Military Defense approval is required for vertical clearance on STRAHNET designated highways or connectors. STRAHNET designated highways in North Dakota are; I-29 and I-94. STRAHNET connectors are; US-83 connecting Minot AFB to I-94 and US-2 connecting Grand Forks AFB to I-29.

Location(s) & existing features' dimension and design value (locations shall be identified by station and reference point). Identify which feature(s) do not meet, (NDDOT Guidance, AASHTO Guidance, etc.).

III. Proposed design values for the exception element (identify what speed and appropriate dimensions this treatment meets if applicable):

IV. All Design Exceptions must have a safety review and crash analysis. Describe Crash Analysis performed, (include length of analysis period) and discuss crash history relationship to the proposed design exception feature.

V. Impacts other than costs of bringing the features up to minimum design values (e.g., impacts to other design features, ROW, environmental effects, preservation of historical feature, construction issues, social concerns, reduction of design life, compatibility with adjacent roadway features, engineering discretion).

VI. Estimate of construction cost of project:

VII. Estimated increased cost to meet minimum design value for requested design exception:

VIII. Proposed mitigation to address exception feature if applicable (advisory signs, lighting, future work to address design exception, incremental improvements...)

IX. Additional Comments:

Signatures Required for NDDOT Projects:

Recommend Approval

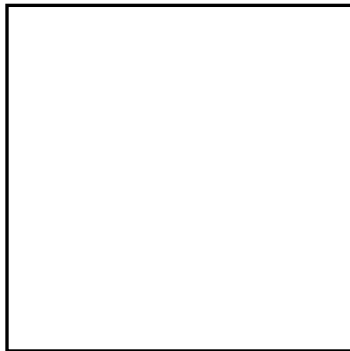
Director, Office of Project Development

Date

Approval

I hereby certify that this Design Exception was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of North Dakota.

PE STAMP HERE



Deputy Director for Engineering

Date

Design Exceptions will be submitted to FHWA on all Interstate projects, on NHS > \$ 3 million and on other full involvement projects selected by mutual agreement between NDDOT and FHWA

FHWA approval required: ☐ Yes ☐ No (*Designer to check one*)

Approval

(If unapproved, document will be returned, unsigned with a letter of explanation.)

Federal Highway Administration

Date

Contingency Yes _____ No _____

Contingencies of FHWA Approval (If applicable):